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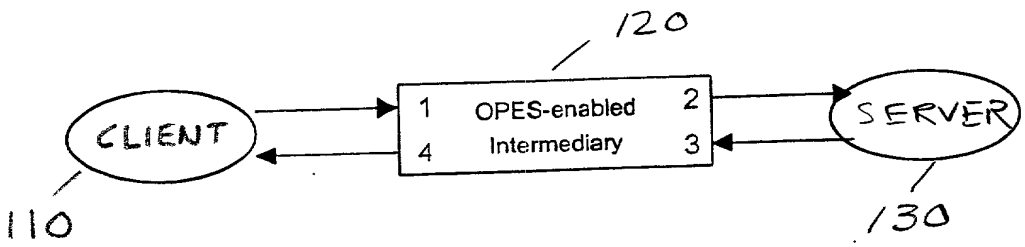

FIG. 1 (PRIOR ART)

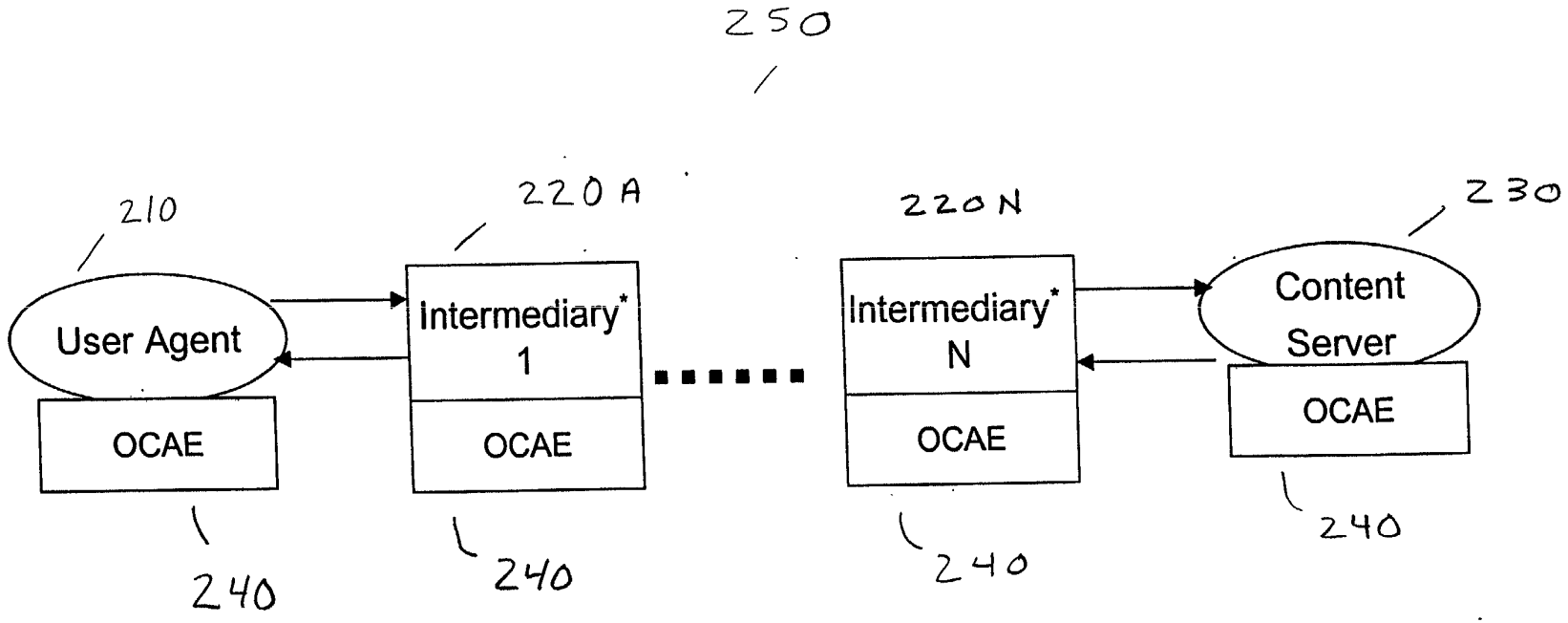
250
210
220A
220N
230
User Agent
Intermediary* 1
Intermediary* N
Content Server
OCAE
OCAE
OCAE
OCAE
240
240
240
240

FIG. 2

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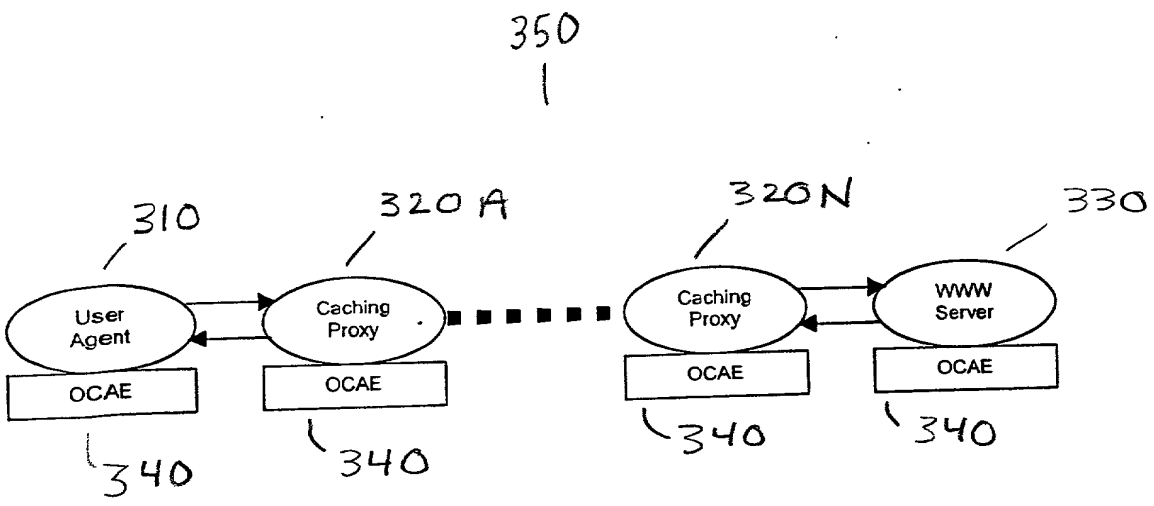

FIG. 3

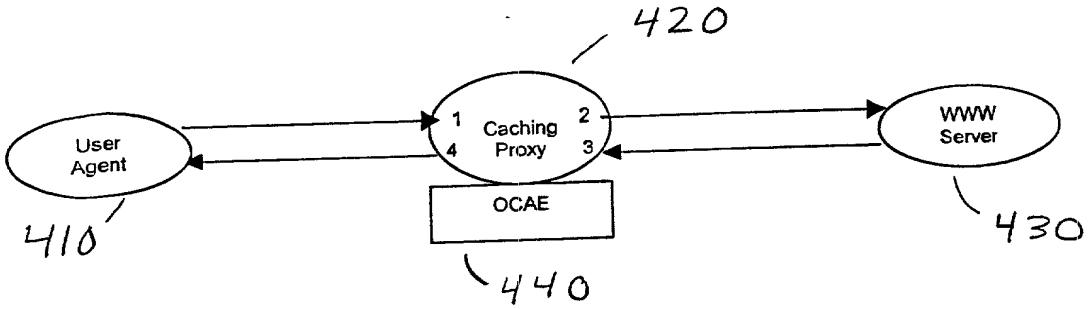

FIG. 4A

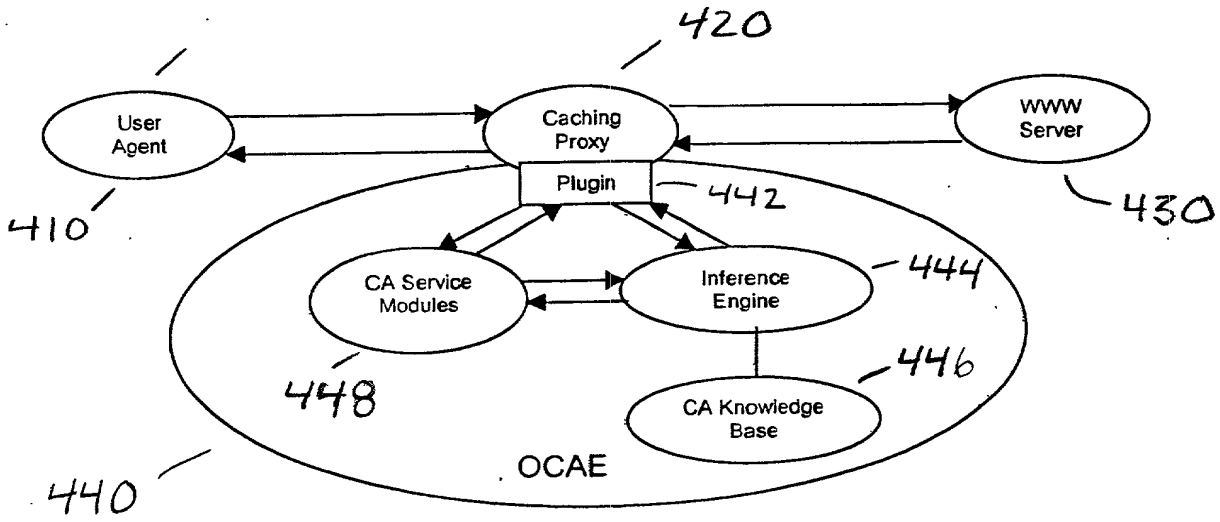
420
User Agent
Caching Proxy
WWW Server
Plugin
442
410
430
CA Service Modules
Inference Engine
444
448
446
CA Knowledge Base
OCAE
440

FIG. 4B

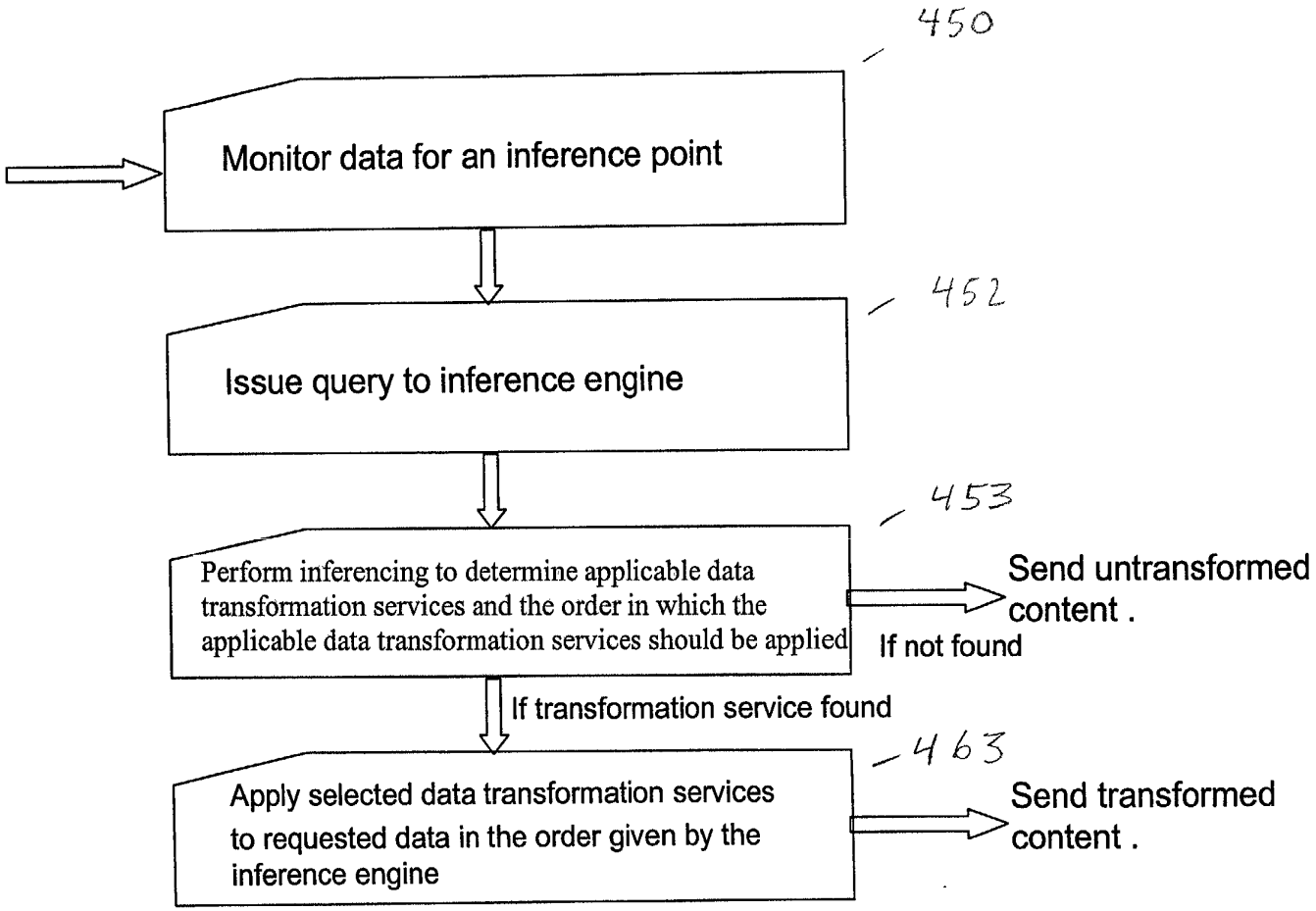
450
Monitor data for an inference point
452
Issue query to inference engine
453
Perform inferencing to determine applicable data transformation services and the order in which the applicable data transformation services should be applied
Send untransformed content .
If not found
If transformation service found
463
Apply selected data transformation services to requested data in the order given by the inference engine
Send transformed content .

FIG. 4C

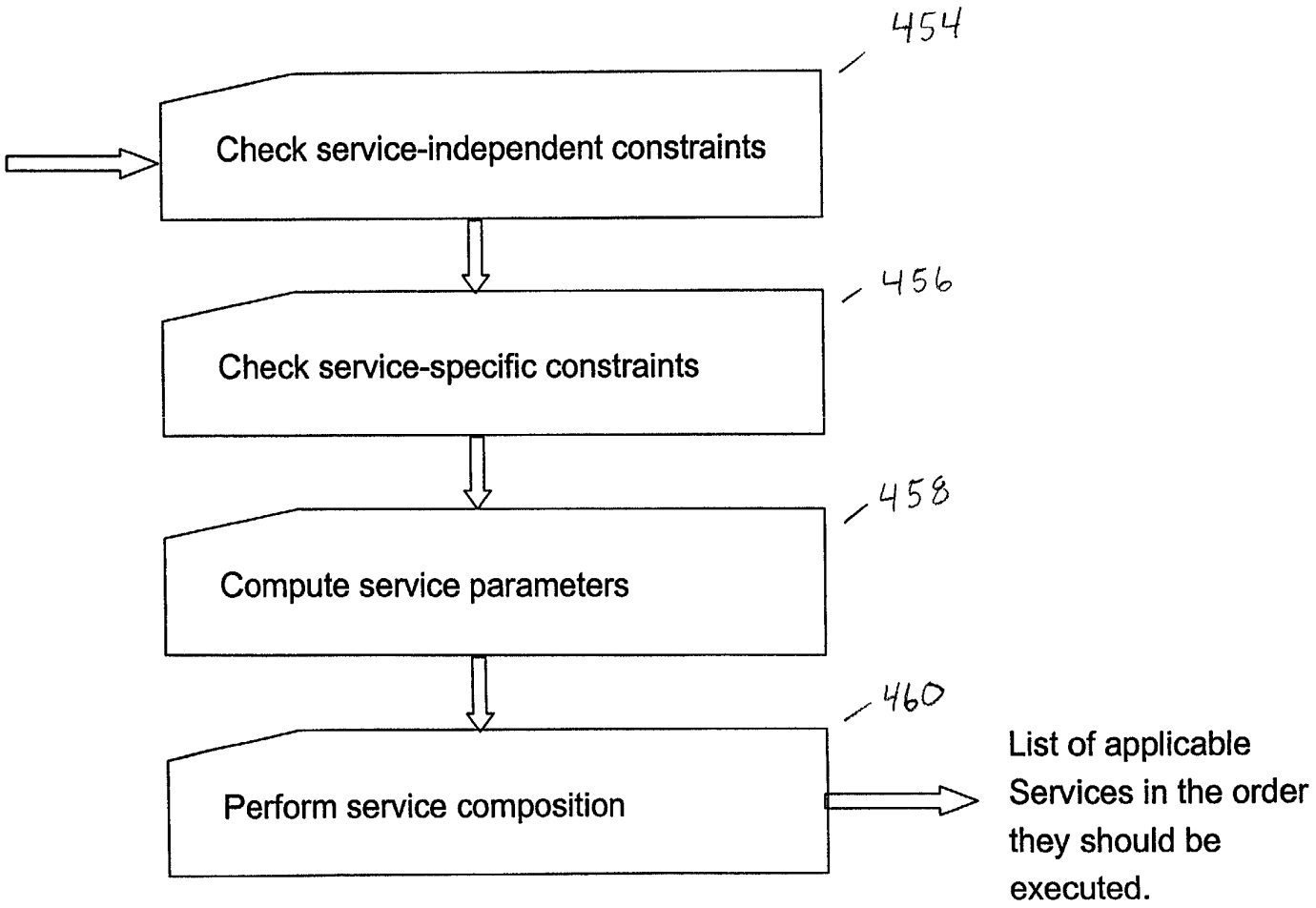
454
Check service-independent constraints
456
Check service-specific constraints
458
Compute service parameters
460
Perform service composition
List of applicable Services in the order they should be executed.

FIG. 4D

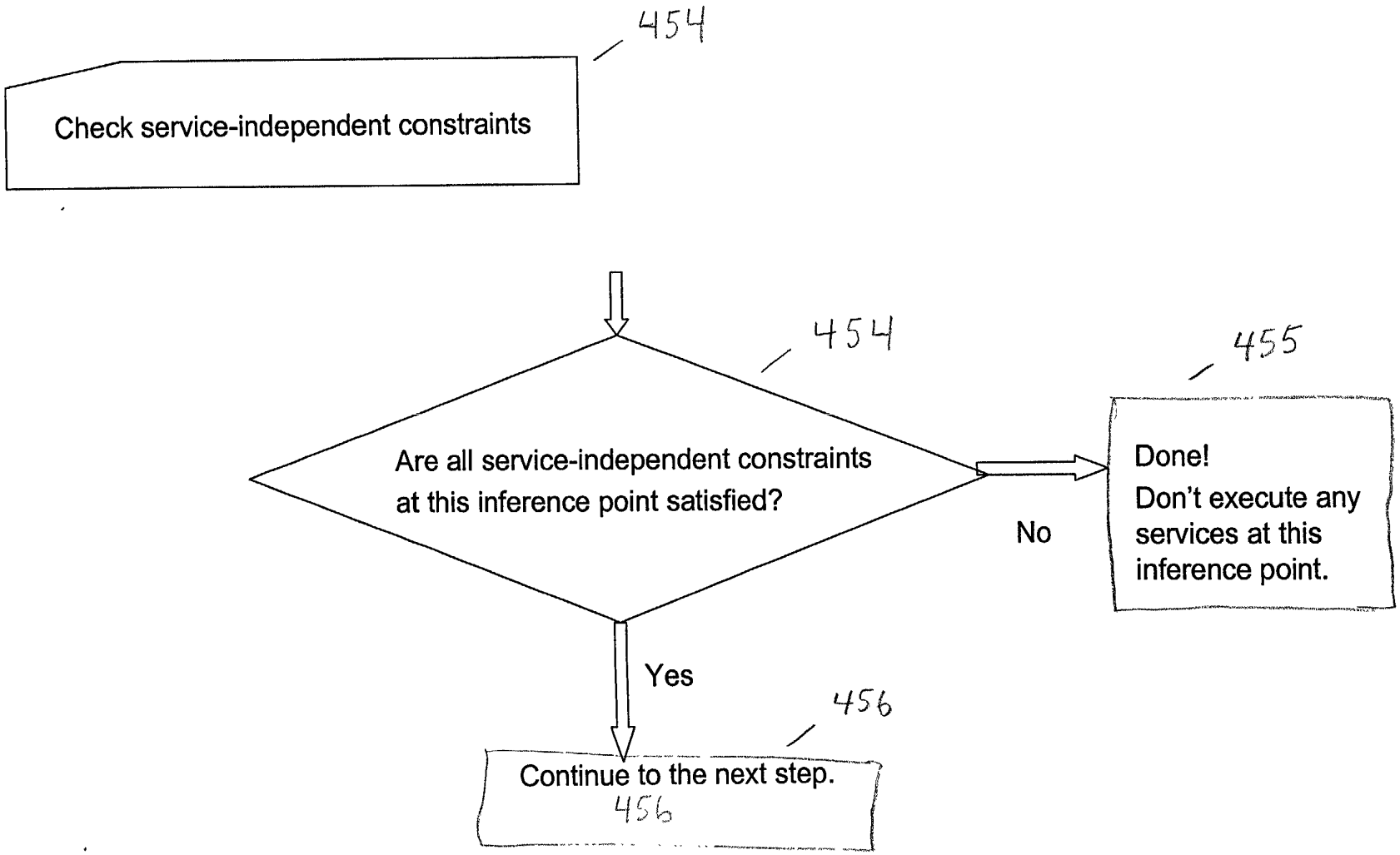
454
Check service-independent constraints
454
Are all service-independent constraints at this inference point satisfied?
No
455
Done!
Don't execute any services at this inference point.
Yes
456
Continue to the next step.
456

FIG 4E

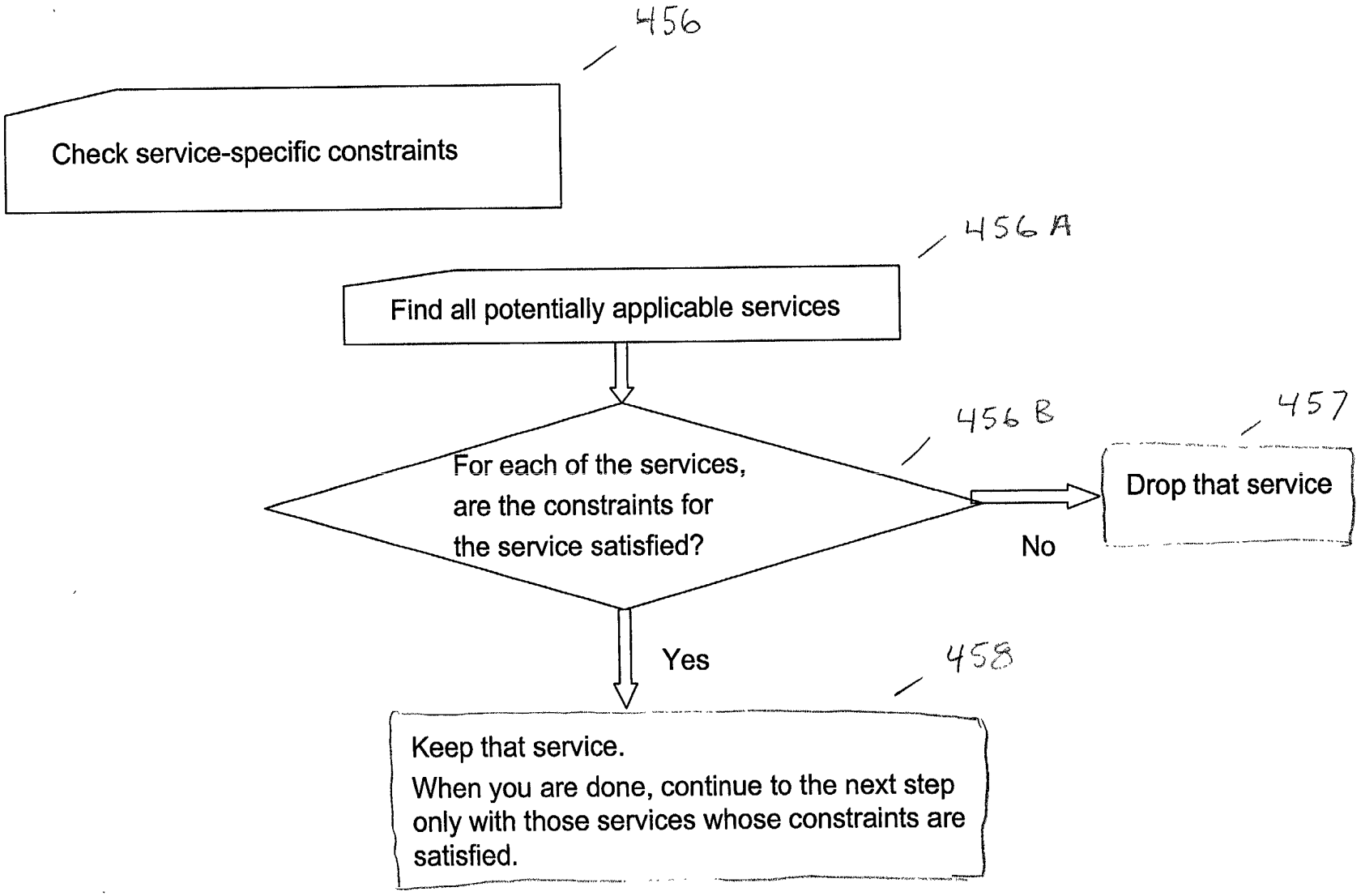
456
Check service-specific constraints
456A
Find all potentially applicable services
456B
For each of the services, are the constraints for the service satisfied?
No
457
Drop that service
Yes
458
Keep that service.
When you are done, continue to the next step only with those services whose constraints are satisfied.

FIG. 4F

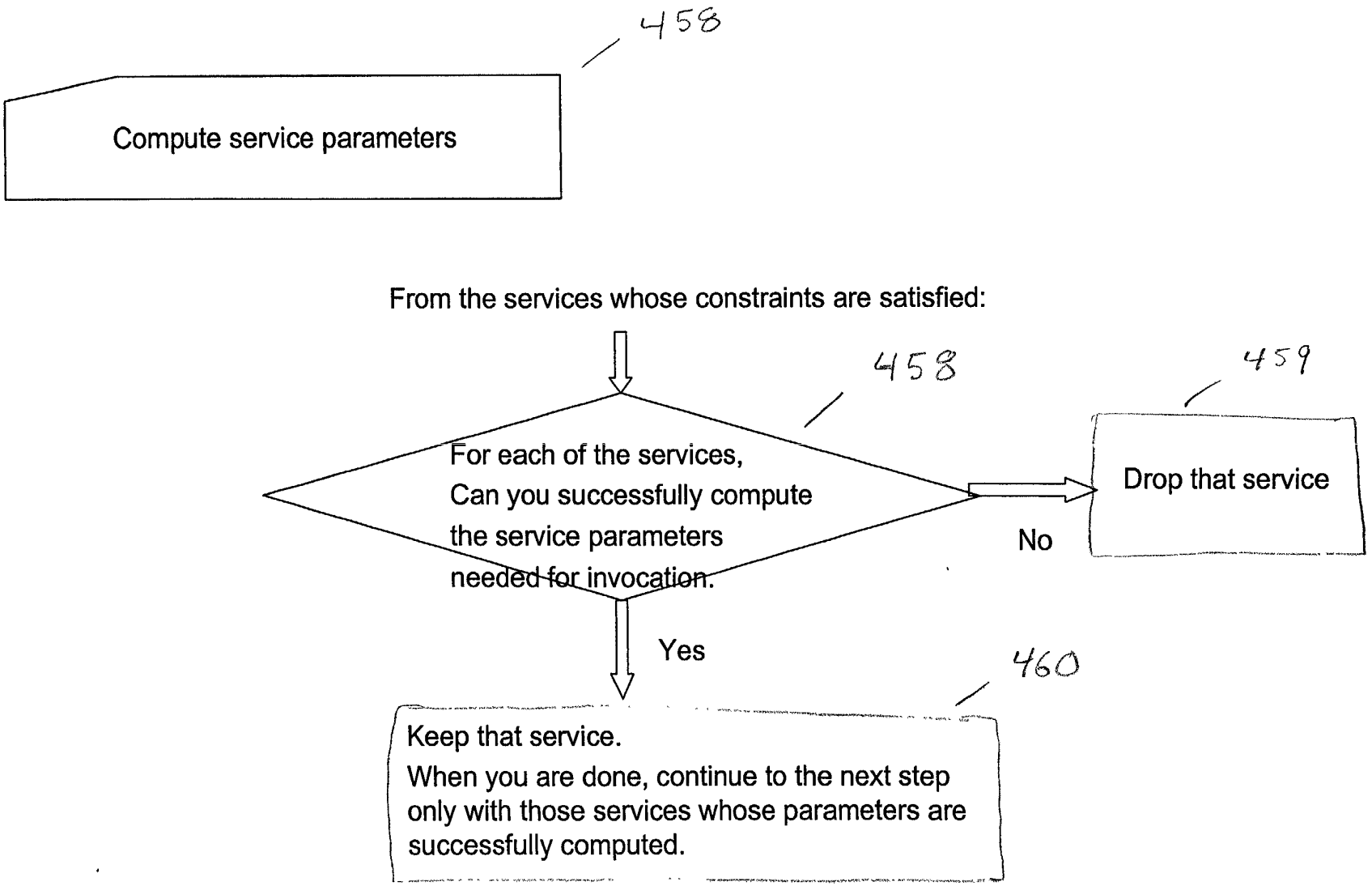
458
Compute service parameters
From the services whose constraints are satisfied:
458
459
For each of the services,
Can you successfully compute
the service parameters
needed for invocation.
Drop that service
No
Yes
460
Keep that service.
When you are done, continue to the next step
only with those services whose parameters are
successfully computed.

FIG. 4G

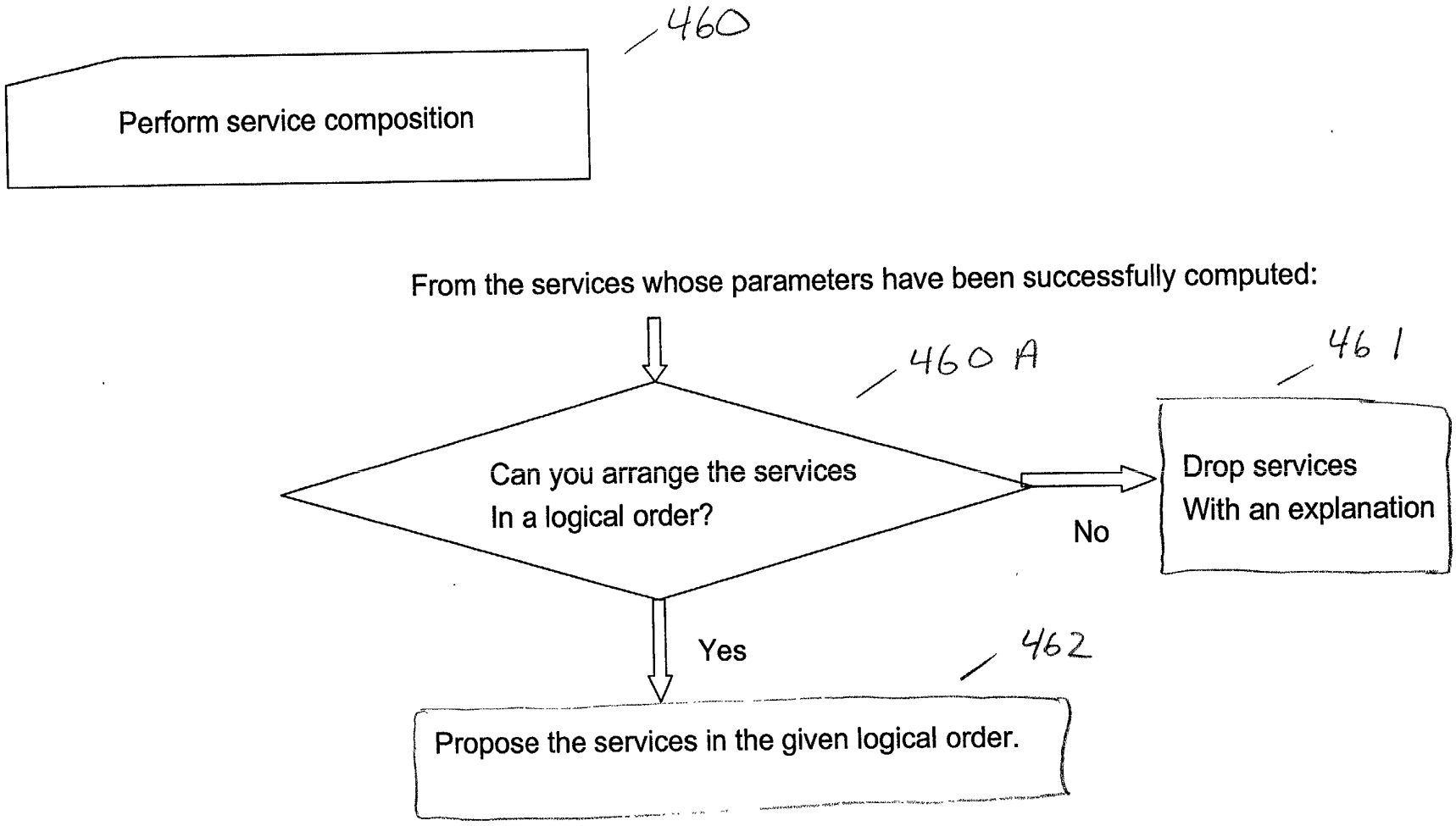
460
Perform service composition
From the services whose parameters have been successfully computed:
460 A
Can you arrange the services
In a logical order?
No
461
Drop services
With an explanation
Yes
462
Propose the services in the given logical order.

FIG. 4H

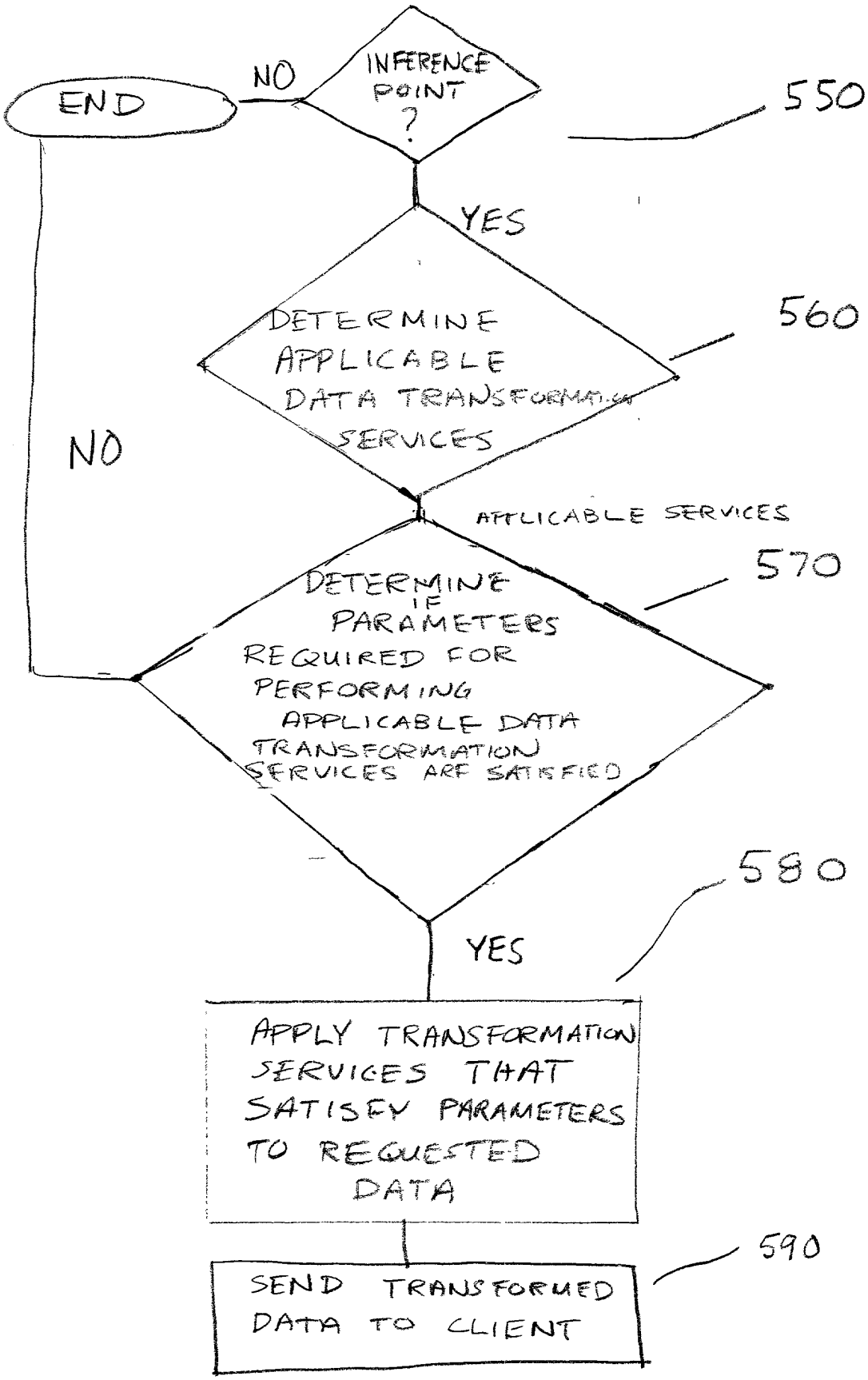
INFERENCE POINT ?
NO
END
550
YES
DETERMINE APPLICABLE DATA TRANSFORMATION SERVICES
560
NO
APPLICABLE SERVICES
DETERMINE IF PARAMETERS REQUIRED FOR PERFORMING APPLICABLE DATA TRANSFORMATION SERVICES ARE SATISFIED
570
580
YES
APPLY TRANSFORMATION SERVICES THAT SATISFY PARAMETERS TO REQUESTED DATA
590
SEND TRANSFORMED DATA TO CLIENT

FIG. 5

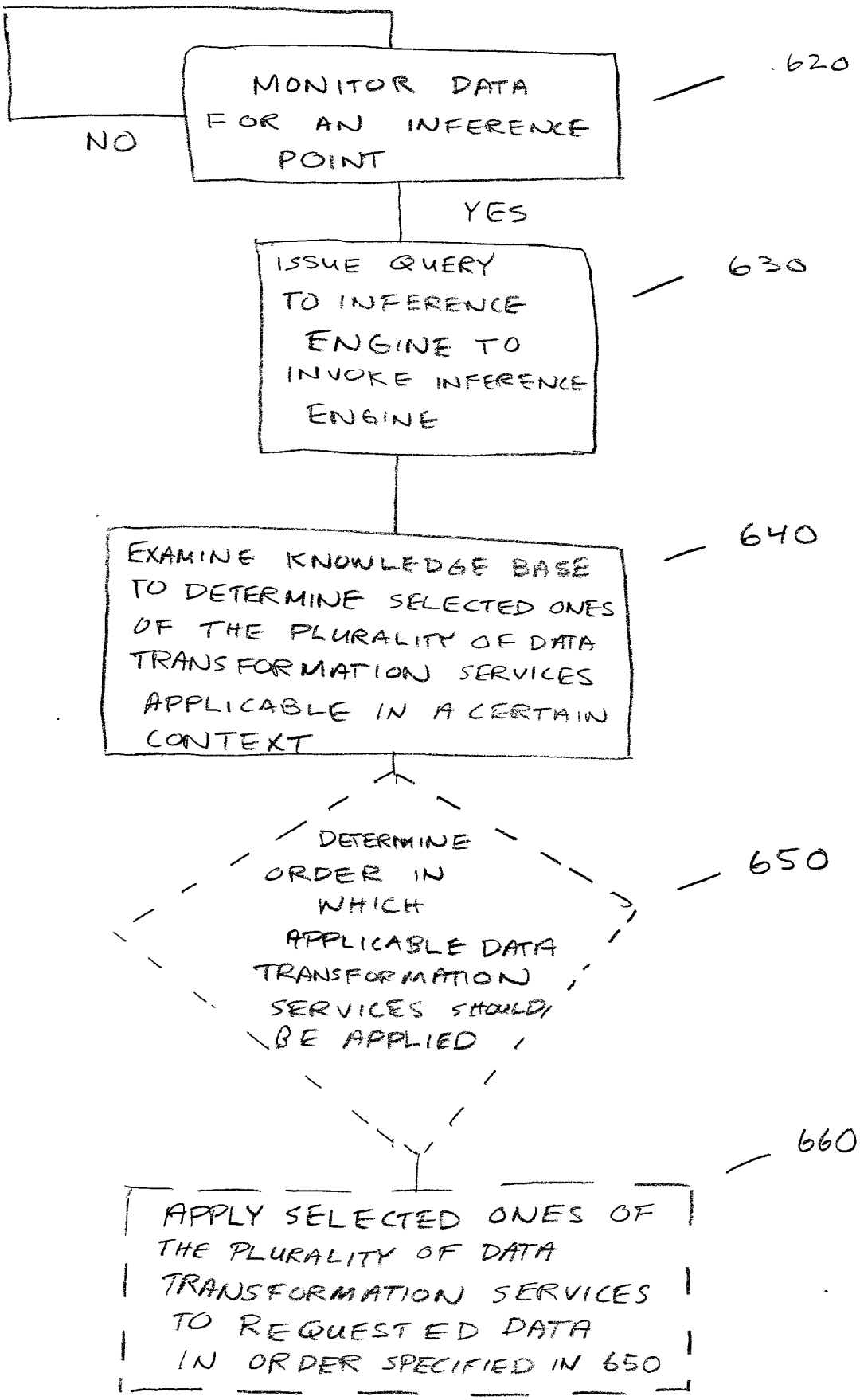
MONITOR DATA FOR AN INFERENCE POINT
620
NO
YES
ISSUE QUERY TO INFERENCE ENGINE TO INVOKE INFERENCE ENGINE
630
EXAMINE KNOWLEDGE BASE TO DETERMINE SELECTED ONES OF THE PLURALITY OF DATA TRANSFORMATION SERVICES APPLICABLE IN A CERTAIN CONTEXT
640
DETERMINE ORDER IN WHICH APPLICABLE DATA TRANSFORMATION SERVICES SHOULD BE APPLIED
650
APPLY SELECTED ONES OF THE PLURALITY OF DATA TRANSFORMATION SERVICES TO REQUESTED DATA IN ORDER SPECIFIED IN 650
660

FIG 6